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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/880,458	06/12/2001	Roger May	015114-053400US	5231

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EXAMINER	
TAN, VIBOL	

ART UNIT	PAPER NUMBER
2819	

DATE MAILED: 11/28/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/880,458	MAY ET AL.	
	Examiner	Art Unit	
	Vibol Tan	2819	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 November 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-42* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *39,41 and 42* is/are allowed.

6)☒ Claim(s) *1-4,19,20,22,28,33,38 and 40* is/are rejected.

7)☒ Claim(s) *5-14,16-18,21,23-27,29-32 and 34-37* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a)☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 15, 19, 20, and 28 are rejected under 35 U.S.C. 102(b) as being anticipated by Cliff et al. (U. S. PAT. 5,999,015).

In claim 1, Cliff et al. teaches all claimed features in Fig. 6, an integrated circuit (230), comprising: programmable logic circuitry (10); embedded processor circuitry comprising a processor (204); and shared I/O circuitry (208) coupled to the embedded processor circuitry (204) and the programmable logic circuitry (10) that comprises a plurality of I/O pins (not shown; I/O 208 must inherently comprise I/O pins) which are accessible by the processor and the programmable logic circuitry.

In claim 15, Cliff et al. further teaches all claimed features in Fig. 6, the integrated circuit of claim 1 wherein data bits (inherency) are loaded into the programmable logic circuitry through the I/O pins of the shared I/O circuitry to configure the programmable logic circuitry.

Claim 19 is essentially the same in scope as claim 1; therefore, it is rejected in the same manner.

Method claim 20 is essentially the same in scope as apparatus claim 1; therefore, it is rejected in the same manner.

Method claim 28 is essentially the same in scope as apparatus claim 1; therefore, it is rejected in the same manner.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 2-4, 22, 33, 38, and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cliff et al. in view of Ashby (U. S. PAT. 5,347,181).

In claim 2, Cliff et al. teaches all claimed features in Fig. 6, the integrated circuit of claim 1; with the exception of teaching wherein the shared I/O circuitry further comprises a plurality of output driver circuits, each coupled to one of the I/O pins, that drive signals sent to the I/O pins. However, Ashby teaches all claimed features in Figs. 1-11 wherein the shared I/O circuitry (14) further comprises a plurality of output driver circuits (54, 72), each coupled to one of the I/O pins (56, 74), that drive signals sent to the I/O pins.

Therefore; it would have been obvious to one ordinary skill in the art at the time of the invention was made to implement the shared I/O circuitry of Ashby into the circuit of cliff et al. in order to allow for a flexible three-way interface between a processor, a programmable logic and the external circuit.

In claim 3, Ashby further teaches all claimed features in Figs. 1-11 the integrated circuit of claim 1 wherein the shared I/O circuitry further comprises a plurality of input

driver circuits (167, 195), each coupled to one of the I/O pins (166, 191), that drive signals received on the I/O pins.

Therefore; it would have been obvious to one ordinary skill in the art at the time of the invention was made to implement the shared I/O circuitry of Ashby into the circuit of cliff et al. in order to allow for a flexible three-way interface between a processor, a programmable logic and the external circuit.

In claim 4, Ashby further teaches all claimed features in Figs. 1-11, the integrated circuit of claim 1 wherein the shared I/O circuitry (14) further comprises: a first multiplexer (50) coupled to receive a first data signal (SIG_FROM_ASIS) from the programmable logic circuitry (16) at a first input (I1) and a second data signal (SIG_FROM_UP) from the embedded processor circuitry (12) at a second input (I0); and a driver circuit (54) that drives an output (OUT) of the first multiplexer onto a first one (56) of the I/O pins.

Therefore; it would have been obvious to one ordinary skill in the art at the time of the invention was made to implement the shared I/O circuitry of Ashby into the circuit of cliff et al. in order to allow for a flexible three-way interface between a processor, a programmable logic and the external circuit.

Method claim 22 is essentially the same in scope as apparatus claim 4; therefore, it is rejected in the same manner.

In claim 33, Cliff et al. teaches all claimed features in Fig. 6, an integrated circuit, comprising: a programmable logic portion (203); an embedded logic portion (10) adjacent to a first edge (bottom edge) of the integrated circuit, the embedded logic

portion comprising a processor (204); and a shared I/O portion (208) in between the programmable logic portion and the embedded logic portion,; with the exception of teaching the shared I/O portion comprising first I/O pins that are accessible by circuitry in the programmable logic portion and the embedded logic portion. However, Ashby teaches in Fig. 1 the shared I/O portion comprising first I/O pins (22, 23, 24) that are accessible by circuitry in the programmable logic portion and the embedded logic portion.

Therefore; it would have been obvious to one ordinary skill in the art at the time of the invention was made to implement the shared I/O circuitry of Ashby into the circuit of cliff et al. in order to allow for a flexible three-way interface between a processor, a programmable logic and the external circuit.

Method claim 38 is essentially the same in scope as apparatus claim 33; therefore, it is rejected in the same manner.

Method claim 40 is essentially the same in scope as apparatus claim 33; therefore, it is rejected in the same manner.

5. Claims 5-14, 16-18, 21, 23-27, 29-32, and 34-37 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. Claims 39, 41, and 42 appear to comprise allowable subject matters.

Response to Arguments

7. Applicant's arguments with respect to claims 1-4, 19, 20, 22, 28, 33, 38, and 40 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vibol Tan whose telephone number is (703) 306-5948. The examiner can normally be reached on Monday-Friday (7:00 AM-4:30 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mike J. Tokar can be reached on (703) 305-3493. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0959.

Vibol Tan

Patent Examiner, AU 2819